

Appendix B

Metric and Thermal Conversion Tables

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Metric Conversions

Table B1 presents Summary Statistics for Natural Gas in the United States for 1995 through 1999 in metric units of measure. Volumes are shown in cubic meters instead of cubic feet. Prices are shown in dollars per thousand cubic meters instead of dollars per thousand cubic feet. The data in this table have been converted from the data that appear in Table 1 of this report.

Thermal Conversions

Table B2 presents the thermal (Btu) conversion factors and the converted data for natural gas supply and disposition from 1995 through 1999. A brief documentation for the thermal conversion factors follows:

- *Marketed Production.* The conversion factor is calculated by adding the total heat content of dry production to the total heat content of extraction loss and dividing the resulting sum by the total quantity of dry production and extraction loss (see below).
- *Extraction Loss.* The conversion factor is based on data from Table 7 of this publication.
- *Dry Production.* The conversion factor is assumed to be the same as the thermal conversion factors for consumption (see below).
- *Receipts at U.S. Borders.* The conversion factor for 1994 imports was obtained from the discontinued Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." The 1994 conversion factor has been applied to volumes reported through 1998. Intransit receipts are assumed to have the same average heat content as imports.
- *Withdrawals from Storage.* Both underground and LNG storage withdrawals are assumed to have the same heat content as consumption (see below).
- *Supplemental Gas Supplies.* This conversion factor is assumed to be the same as that for consumption (see below).
- *Balancing Item.* This conversion factor is calculated by subtracting the total heat content of all other items of supply from the heat content of total disposition (from Table B2) and dividing the difference by the balancing item quantity.
- *Consumption.* The thermal conversion factor for total consumption (lease fuel, plant fuel, pipeline fuel, and deliveries to consumers) is the average heat content for deliveries to end users as reported on Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." Average heat content of electric utility consumption is obtained from EIA's *Electric Power Annual*. The factor for other sectors consumption is calculated by subtracting the total heat content of electric utility consumption from the heat content of total consumption and dividing the difference by the quantity of other sectors consumption (total consumption less electric utility consumption).
- *Deliveries at U.S. Borders.* The conversion factor for 1994 exports was obtained from the discontinued Form FPC-14. The 1994 conversion factor has been applied to volumes reported through 1998. Intransit deliveries are assumed to have the same average heat content as exports.
- *Additions to Storage.* Additions to both underground and LNG storage are assumed to have the same heat content as consumption (see above).

Table B1. Summary Statistics for Natural Gas in the United States, Metric Equivalents, 1995-1999

	1995	1996	1997	1998	1999
Number of Gas and Gas Condensate Wells					
Producing at End of Year	298,541	301,811	310,971	R316,929	307,449
Production (million cubic meters)					
Gross Withdrawals					
From Gas Wells.....	489,373	502,265	505,287	R501,753	496,704
From Oil Wells.....	182,972	180,554	180,340	R180,576	175,973
Total	672,345	682,819	685,627	R682,329	672,677
Repressuring	-100,950	-99,413	-98,869	R-97,327	-93,576
Nonhydrocarbon Gases Removed	-10,998	-14,680	-16,953	R-17,442	-17,265
Wet After Lease Separation	560,396	568,726	569,804	R567,560	561,836
Vented and Flared.....	-8,035	-7,705	-7,259	R-6,640	-6,943
Marketed Production	552,362	561,020	562,545	R560,921	554,893
Extraction Loss.....	-25,706	-27,133	-27,291	-26,555	-25,520
Total Dry Production.....	526,656	533,888	535,255	R534,365	529,373
Supply (million cubic meters)					
Dry Production.....	526,656	533,888	535,255	R534,365	529,373
Receipts at U.S. Borders					
Imports	80,450	83,178	84,786	89,256	101,530
Intransit Receipts	13,946	15,187	15,518	13,637	13,775
Withdrawals from Storage					
Underground Storage.....	84,217	82,440	79,974	67,319	78,481
LNG Storage	1,428	1,962	1,969	1,539	2,885
Supplemental Gas Supplies.....	3,123	3,099	2,921	2,894	2,782
Balancing Item.....	-6,513	6,148	1,728	R-5,087	-19,344
Total Supply	703,307	725,902	722,149	R703,924	709,482
Disposition (million cubic meters)					
Consumption	611,096	622,025	621,800	R602,551	614,320
Deliveries at U.S. Borders					
Exports	4,364	4,344	4,446	4,503	4,627
Intransit Deliveries.....	13,946	15,187	14,629	13,010	14,004
Additions to Storage					
Underground Storage.....	72,658	82,277	79,296	82,220	73,553
LNG Storage	1,243	2,069	1,978	1,639	2,978
Total Disposition	703,307	725,902	722,149	R703,924	709,482
Consumption (million cubic meters)					
Lease Fuel.....	22,436	22,643	21,983	R21,890	19,189
Pipeline Fuel.....	19,831	20,146	21,279	17,995	20,815
Plant Fuel	12,115	12,744	12,088	11,364	11,313
Delivered to Consumers					
Residential.....	137,346	148,420	141,125	128,000	133,771
Commercial	85,831	89,432	91,036	84,936	86,333
Industrial.....	242,947	251,182	250,107	245,964	254,575
Vehicle Fuel.....	76	83	125	144	161
Electric Utilities	90,515	77,376	84,057	92,258	88,162
Total Delivered to Consumers	556,714	566,493	566,451	551,302	563,003
Total Consumption.....	611,096	622,025	621,800	R602,551	614,320
Delivered for the Account of Others (million cubic meters)					
Residential.....	1,282	1,392	1,728	2,977	6,377
Commercial	19,996	20,011	26,599	28,041	29,226
Industrial.....	184,551	202,519	205,947	207,827	210,364
Electric Utilities	59,757	52,995	54,719	60,962	60,510

See footnotes at end of table.

**Table B1. Summary Statistics for Natural Gas in the United States, Metric Equivalents, 1995-1999
(Continued)**

	1995	1996	1997	1998	1999
Number of Consumers					
Residential.....	54,322,179	55,263,673	56,186,958	57,321,746	58,200,837
Commercial.....	4,636,500	4,720,227	4,761,409	5,044,497	5,007,325
Industrial.....	209,398	206,049	238,961	231,438	230,137
Average Annual Consumption per Consumer (thousand cubic meters)					
Commercial.....	19	19	19	17	17
Industrial.....	1,160	1,219	1,047	1,063	1,106
Average Prices for Natural Gas (dollars per thousand cubic meters)					
Wellhead (Marketed Production).....	54.74	76.63	81.93	^R 68.86	76.63
Imports.....	52.62	69.57	76.63	69.57	79.10
Exports.....	84.40	104.88	106.65	86.52	92.17
Pipeline Fuel.....	52.62	80.16	80.87	70.98	68.86
City Gate.....	98.17	115.48	129.25	108.42	109.48
Delivered to Consumers					
Residential.....	214.01	223.89	245.08	240.85	236.26
Commercial.....	178.34	190.70	204.83	193.52	188.23
Industrial.....	95.70	120.78	126.78	110.89	109.48
Vehicle Fuel.....	140.55	153.27	156.80	162.09	153.27
Electric Utilities.....	71.34	95.00	98.17	84.76	92.52

^R = Revised data.

Notes: Beginning in 1987, prices for gas delivered to consumers are calculated using only on-system sales data. No imputations are made for prices of gas delivered for the account of others. In previous years, prices were calculated using reported values and values imputed for gas delivered for the account of others. The United States includes the 50 States and the District of Columbia. Totals may not equal sum of components due to independent rounding. Beginning in 1996, consumption of natural gas for agricultural use was classified as industrial use. In 1995, agricultural use was classified as commercial use.

Sources: Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"; Form EIA-627, "Annual Quantity and Value of Natural Gas Report" (1995); Form EIA-895, "Monthly Quantity and Value of Natural Gas Report" (1996 through 1999); Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"; Form EIA-816, "Monthly Natural Gas Liquids Report"; Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"; Form EIA-759, "Monthly Power Plant Report"; Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants"; Form EIA-191, "Underground Gas Storage Report"; Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports; U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, Annual Reports*, DOE/EIA-0216; and the U.S. Minerals Management Service.

Table B2. Thermal Conversion Factors and Data, 1995-1999

	1995	1996	1997	1998	1999
Conversion Factor (Btu per cubic foot)					
Production					
Marketed	1,106	1,109	1,107	1,110	1,111
Extraction Loss	2,730	2,721	2,704	2,694	2,864
Total Dry Production	1,027	1,027	1,026	1,031	1,027
Supply					
Dry Production	1,027	1,027	1,026	1,031	1,027
Receipts at U.S. Borders					
Imports	1,021	1,022	1,023	1,023	1,022
Intransit Receipts	1,021	1,022	1,023	1,023	1,022
Withdrawals from Storage					
Underground Storage	1,027	1,027	1,026	1,031	1,027
LNG Storage	1,027	1,027	1,026	1,031	1,027
Supplemental Gas Supplies	1,027	1,027	1,026	1,031	1,027
Balancing Item	988	1,056	1,029	^R 941	1,017
Total Supply	NA	NA	NA	NA	NA
Disposition					
Consumption	1,027	1,027	1,026	1,031	1,027
(Electric Utility)	(1,025)	(1,024)	(1,019)	(1,022)	(1,019)
(Other Sectors)	(1,027)	(1,027)	(1,027)	(1,033)	(1,028)
Deliveries at U.S. Borders					
Exports	1,011	1,011	1,011	1,011	1,006
Intransit Deliveries	1,011	1,011	1,011	1,011	1,006
Additions to Storage					
Underground Storage	1,027	1,027	1,026	1,031	1,027
LNG Storage	1,027	1,027	1,026	1,031	1,027
Total Disposition	NA	NA	NA	NA	NA
Summary Data (billion Btu)					
Production					
Marketed	21,579,527	21,970,606	21,999,810	^R 21,982,256	21,780,064
Extraction Loss	-2,478,684	-2,607,484	-2,606,015	-2,526,324	-2,580,690
Total Dry Production	19,100,844	19,363,122	19,393,794	^R19,455,932	19,199,374
Supply					
Dry Production	19,100,844	19,363,122	19,393,794	^R 19,455,932	19,199,374
Receipts at U.S. Borders					
Imports	2,901,166	3,002,256	3,063,489	3,225,082	3,664,386
Intransit Receipts	502,902	548,172	560,686	492,737	497,171
Withdrawals from Storage					
Underground Storage	3,054,402	2,989,933	2,897,675	2,451,042	2,846,365
LNG Storage	51,808	71,157	71,324	56,050	104,621
Supplemental Gas Supplies	113,268	112,410	105,835	105,357	100,899
Balancing Item	-227,156	229,205	82,357	^R -169,065	-695,025
Total Supply	25,497,233	26,316,256	26,175,161	^R25,617,136	25,717,791
Disposition					
Consumption	22,163,343	22,559,714	22,549,125	^R 21,938,533	22,280,240
(Electric Utility)	(3,276,420)	(2,798,076)	(3,024,854)	(3,329,731)	(3,172,574)
(Other Sectors)	(18,886,922)	(19,761,638)	(19,524,271)	^R (18,608,802)	(19,107,665)
Deliveries at U.S. Borders					
Exports	155,799	155,115	158,783	160,770	164,395
Intransit Deliveries	497,849	542,354	522,469	464,555	497,511
Additions to Storage					
Underground Storage	2,635,161	2,984,043	2,873,102	2,993,596	2,667,642
LNG Storage	45,082	75,029	71,681	59,681	108,003
Total Disposition	25,497,233	26,316,256	26,175,161	^R25,617,136	25,717,791

^R = Revised data.

NA = Not available.

Notes: See accompanying text for conversion factor documentation. Items appearing in parentheses are subsets of other items for which data are shown in this table and are not involved in the summing of supply and disposition. Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration (EIA), Form EIA-627, "Annual Quantity and Value of Natural Gas Report" (1995); Form EIA-895, "Monthly Quantity and Value of Natural Gas Report" (1996 through 1999); Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"; Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"; Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*; Forms EIA-191/FERC-8, "Underground Gas Storage Report"; and Form EIA-767, "Steam-Electric Plant Operating and Design Report."